USDA Forest Service, US Department of Agriculture
Northern Research Station

Indiana's Forest Resources, 2008

Research Note NRS-36

This publication provides an overview of forest resource attributes for Indiana based on an annual inventory conducted by the Forest Inventory and Analysis (FIA) program at the Northern Research Station of the U.S. Forest Service. These estimates, along with web-posted core tables, will be updated annually. For more information please refer to page 4 of this report. For full report: http://nrs.fs.fed.us/pubs/rb/rb_nc253a.pdf

Table 1. – Annual estimates, uncertainty, and change

	Estimate 2008	Sampling error (%)	Change since 2003 (%)
Forest Land Estimates			
Area (1,000 acres)	4,745.0	1.3	4.2
Number of live trees 1-inch diameter or larger (million trees)	2,194.7	2.3	-3.9
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	261,642.4	1.8	10.7
Net volume in live trees (1,000,000 ft^3)	9,791.5	2.0	12.6
Annual net growth of live trees (1,000 ft^3/year)	349,907.9	5.1	NA
Annual mortality of live trees (1,000 ft^3/year)	87,939.2	8.3	NA
Annual harvest removals of live trees (1,000 ft^3/year)	71,180.4	15.9	NA
Annual other removals of live trees (1,000 ft^3/year)	16,758.9	27.3	NA
Timberland Estimates			
Area (1,000 acres)	4,641.8	1.3	5.2
Number of live trees 1-inch diameter or larger (million trees)	2,141.5	2.3	-3.1
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	255,368.5	1.9	11.8
Net volume in live trees (1,000,000 ft^3)	9,553.9	2.0	13.8
Net volume of growing-stock trees (1,000,000 ft^3)	8,645.1	2.1	14.9
Annual net growth of growing-stock trees (1,000 ft^3/year)	319,061.9	5.3	19.0
Annual mortality of growing-stock trees (1,000 ft^3/year)	75,067.4	9.5	12.3
Annual harvest removals of growing-stock trees (1,000 ft^3/year)	63,695.9	16.4	-37.4
Annual other removals of growing-stock trees (1,000 ft^3/year)	14,806.7	28.6	-47.5

Note: When available, sampling errors/bars provided in figures and tables represent 68 percent confidence intervals

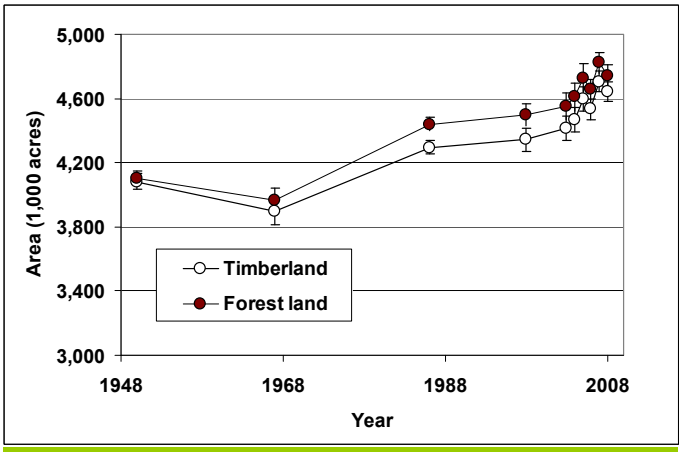


Figure 1. – Area of timberland and forest land by year.

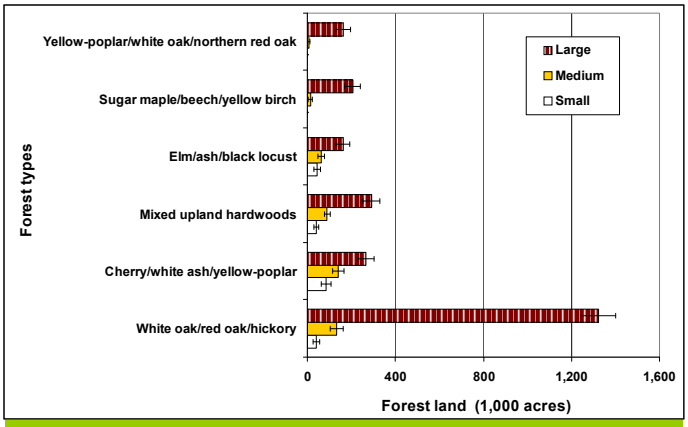


Figure 2. – Area of forest land area by top six forest types and stand size class, 2004-2008.

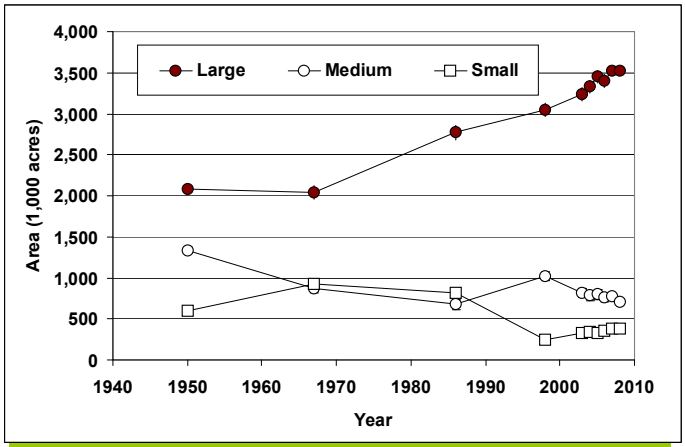
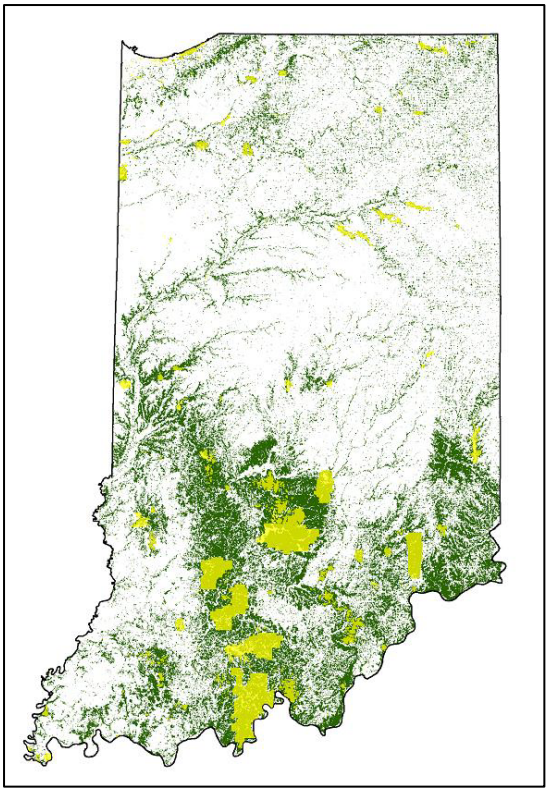


Figure 3. – Area of timberland by stand size class and year.

Table 2. – Top 10 tree species by statewide volume estimates, 2004-2008

Rank	Species	Volume of live trees on forest land (1,000,000 ft^3)	Sampling Error (%)	Change since 2003 (%)	Volume of sawtimber trees on timberland (1,000,000 bdft)	Sampling error (%)	Change since 2003 (%)
1	Yellow-poplar	1096.4	6.9	16.00	4,805.2	7.7	19.30
2	Sugar maple	1053.3	5.4	24.10	3,149.2	6.7	32.30
3	White oak	739.9	6.8	1.70	2,817.5	7.1	3.30
4	Black oak	552.2	8.1	4.30	2,190.2	8.5	9.20
5	White ash	542.8	7.0	12.50	1,793.0	8.8	20.00
6	Northern red oak	434.6	8.6	2.10	1,724.7	9.2	2.20
7	American sycamore	411.9	10.8	12.40	1,687.8	11.2	21.10
8	Red maple	404.9	10.0	47.90	1,128.0	12.8	80.20
9	Shagbark hickory	337.5	8.2	18.70	1,290.8	9.3	33.30
10	Pignut hickory	306.1	8.6	1.90	1,198.1	9.9	5.30
	Other softwoods	310.7	10.9	0.80	981.5	13.0	-2.70
	Other hardwoods	3601.2	3.4	12.40	10,843.1	4.4	18.60
	All Species	**9791.5**	**2.0**	**12.60**	**33,609.0**	**2.4**	**17.50**



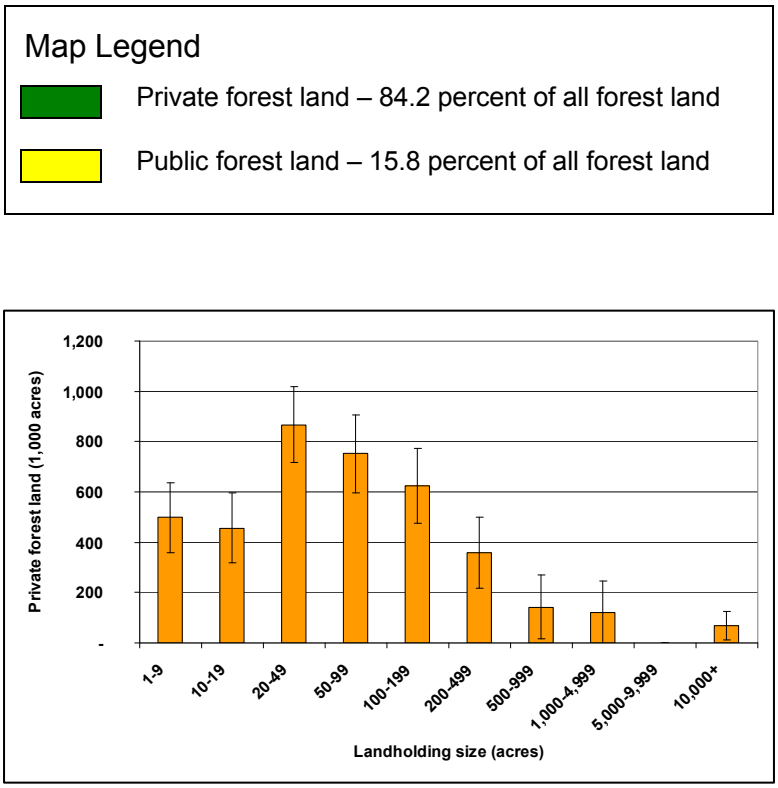


Figure 4. – Area of forest land by major owner group (2008) and size of private family forest landholding (2006).

Can Indiana's Forest Biomass Increase Indefinitely?

Increases in Indiana's forest land area have slowed to a stable or slightly increasing land base over the past decade (Fig. 1). In contrast, Indiana's total forest biomass (aboveground trees) has continued to increase at a steady rate. Assuming a stable forest land base into the near future, the question arises: How long can Indiana expect forest biomass to increase?

Examination of some basic stand density metrics helps indicate future Indiana forest resource trends. First, although total live-tree biomass has increased, the number of trees has stabilized/decreased, indicating maturing forests of fewer but larger trees (Fig. 5). This trend of fewer but larger trees across Indiana should be expected to continue until such a time that stand development or disturbance/utilization reverts forest stands to earlier stages of stand development. Using the Stand Density Index stocking indicator to estimate the percentage of stand stocking in terms of tree size/density metrics for Indiana's forest land (Woodall et al. 2005), the majority of Indiana's stands are fully stocked (approximately 55 percent, Fig. 6). Given that only a minority of Indiana's forests are under-stocked, the State's forests as a whole are most likely closer to their zenith rather than nadir of forest biomass.

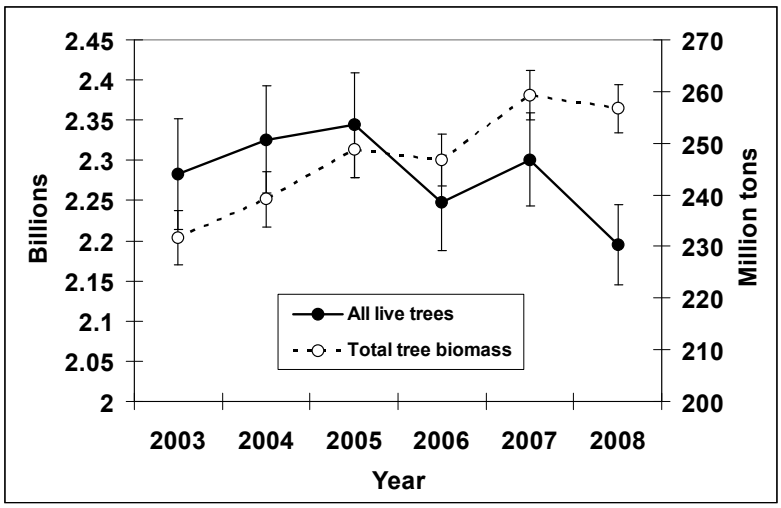


Figure 5. – Annual estimates and associated sampling errors of live trees (billions) and tree biomass (million tons) on forestland, 2004-2008.

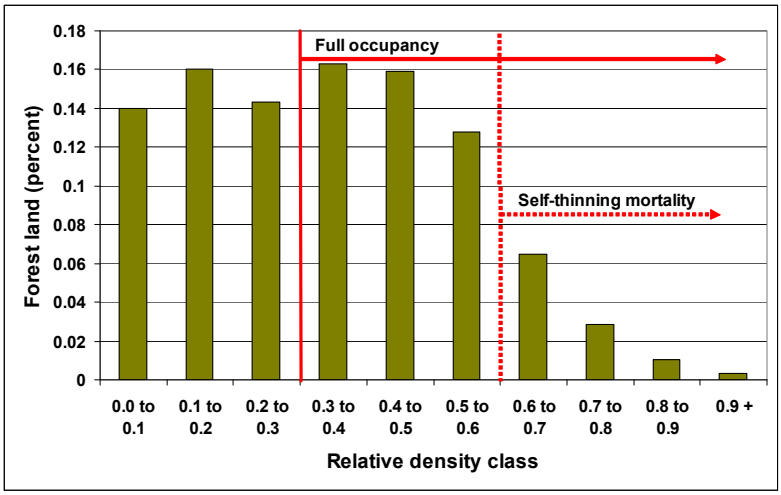


Figure 6. – Percentage of Indiana's total forest land area by classes of relative stand density, 2004-2008 (Note: relative density determined by SDI)

Citation for this Publication

Woodall, C.W.; Webb, M.N., Gallion, J. 2009. Indiana's forest resources, 2008. Res. Note. NRS-36. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 4 p.

FIA Program Information

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Additional Information

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